

WHAT IS CLAIMED IS:

1. An encapsulation device, comprising:
an expandable, porous body having a cavity therein, the body having a sealed end
and a sealable end, wherein the body is configured to receive one or more fluids through
5 a port in the sealable end, wherein the body is configured to expand to conform to a shape
of a target, and wherein the sealable end may be sealed to prevent leakage into the body.
2. The device of claim 1 wherein said body comprises one of expanded
Polytetrafluoroethylene (ePTFE), a porous membrane, a polyester fiberfill, a metal mesh,
10 a polymer mesh, a perforated polymer, and a perforated and/or porous metal.
3. The device of claim 1, wherein the target comprises a location within the human
body.
- 15 4. The device of claim 1, wherein the port in the sealable end receives a first fluid
into said cavity to expand the body to conform to the shape of the target, and wherein the
port receives a second fluid into said cavity which displaces the first fluid by diffusing
the first fluid through the pores in the body and which cures to secure the body to the
20 target.
5. The device of claim 4, wherein the first fluid comprises a saline solution.
6. The device of claim 4, wherein the second fluid comprises one or more of an
adhesive, a hydrogel, and a bioactive agent.
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7. The device of claim 4, wherein the second fluid is more viscous than the first
fluid.
8. The device of claim 4 wherein the second fluid is less viscous than the first fluid.
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9. The device of claim 8 wherein said second fluid includes polyvinylpyrrolidone (PVP).

10. The device of claim 4 wherein the first fluid and the second fluid are radiopaque.

11. The device of claim 1, wherein the body comprises metal having holes.

12. The device of claim 11, wherein the metal comprises nitinol.

13. The device of claim 1, wherein the port in the sealable end comprises a valve configured to open to receive one or more fluids and close to prevent leakage into the body.

14. The device of claim 1, wherein the body includes a wire reinforcement.

15. The device of claim 14 wherein said wire reinforcement includes a support wire positioned substantially within said body.

16. The device of claim 14 wherein said wire reinforcement includes a plurality of anchor wires positioned substantially around the outer surface of said body.

17. The device of claim 14, wherein the wire reinforcement comprises one or more of nitinol, stainless steel, and a structural polymer.

18. The device of claim 14, wherein the wire reinforcement is provided within the body.

19. The device of claim 1, wherein the body comprises a first membrane and a second membrane within the first membrane, wherein the second membrane is more porous than the first membrane.

20. The device of claim 1, wherein the body comprises a first membrane and a second membrane within the first membrane, wherein the first membrane is more porous than the second membrane.

5 21. An encapsulation device, comprising:

an expandable, porous body having a cavity therein, the body having a sealed end and a sealable end, wherein the body is configured to receive one or more fluids through a port in the sealable end, wherein the body is configured to expand to conform to a shape of a target, wherein the sealable end may be sealed to prevent leakage into the body,
10 wherein said body comprises expanded Polytetrafluoroethylene (ePTFE), and further, wherein the port in the sealable end receives a first fluid into said cavity to expand the body to conform to the shape of the target, and wherein the port receives a second fluid into said cavity which displaces the first fluid by diffusing the first fluid through the pores in the body and which cures to secure the body to the target.

15 22. The device of claim 21, wherein the target comprises a location within the human body.

23. The device of claim 21, wherein the first fluid comprises a saline solution.

20 24. The device of claim 21, wherein the second fluid comprises an adhesive.

25. The device of claim 21, wherein the second fluid is more viscous than the first fluid.

25 26. The device of claim 21, wherein the body comprises metal having holes.

27. The device of claim 26, wherein the metal comprises Nickel Titanium alloy (Nitinol).

28. The device of claim 21, wherein the port in the sealable end comprises a valve configured to open to receive one or more fluids and close to prevent leakage into the body.

5 29. The device of claim 21, wherein the body comprises a wire reinforcement.

30. The device of claim 29, wherein the wire reinforcement comprises one or more of Nitinol, stainless steel, and a structural polymer.

10 31. The device of claim 29, wherein the wire reinforcement is provided within the body.

32. The device of claim 21, wherein the body comprises a first membrane and a second membrane within the first membrane, wherein the second membrane is more
15 porous than the first membrane.

33. The device of claim 21, wherein the body comprises a first membrane and a second membrane within the first membrane, wherein the first membrane is more porous
20 than the second membrane.

34. A method of providing an encapsulation device to a desired location, the method comprising:

expanding a porous body to conform to a shape of a target by introducing a first fluid into an opening in the body;

25 introducing a second fluid into the porous body to displace the first fluid through the porous body; and

allowing the second fluid to cure to secure the porous body to the target.

35. The method of claim 34, further comprising the step of inserting a wire
30 reinforcement into the porous body.

36. The method of claim 35, further comprising the step of securing the wire reinforcement to the interior of the porous body.

37. The method of claim 35, further comprising the step of removing the wire reinforcement from the porous body.

38. The method of claim 34, wherein the body comprises one or more of expanded Polytetrafluoroethylene (ePTFE), porous Polyethylene Terephthalate (PET), and metal with holes formed therein.

39. The method of claim 34, further comprising the step of introducing the body to a location of the target.

40. The method of claim 34, wherein the target comprises a location within the human body.

41. The method of claim 34, wherein the first fluid comprises a saline solution.

42. The method of claim 34, wherein the second fluid comprises an adhesive.

43. The method of claim 34, wherein the second fluid is more viscous than the first fluid.

44. A method of providing an encapsulation device , the method comprising:
introducing a fluid into an opening of a porous body to conform the body to a shape of a cavity of a target location; and
curing the fluid introduced into the porous body at the target location such that the porous body substantially fills the cavity of said target location.

45. The method of claim 44 wherein the target location is in vivo.

46. The method of claim 44 wherein said fluid is a radiopaque agent.

47. The method of claim 44 wherein said fluid is a UV curable adhesive.

5 48. The method of claim 47 wherein said step of curing includes providing a UV light source to said adhesive.

10 49. The method of claim 44 wherein said porous body includes a plurality of pores, and further, wherein said introducing step includes the step of weeping at least a predetermined amount of said fluid out of said pores on said porous body at the target location.